CLAIMS

1. A method of forming a tablet product, which comprises:

a) closing off a perforation in a perforated plate;
b) directing powder into said closed-off perforation by the sweeping action of a first director blade spaced from said perforated plate;
c) compacting said powder in the closed-off perforation to form a tablet; and
d) transferring said tablet from the closed-off perforation,

characterized by relative rotary motion of the perforated plate and said first director blade.

2. A method according to claim 1, wherein the first director blade is held static and the perforated plate moves in rotary fashion relative thereto.

3. A method according to claim 1, wherein the perforated plate is held static and the first director blade moves in rotary fashion relative thereto.

4. A method according to claim 1, wherein both of the first director blade and the perforated plate both move in rotary fashion.

5. A method according to any of claims 1 to 4, wherein the perforated plate is in the form of a planar disk having plural perforations arranged in circular fashion thereon.

6. A method according to any of claims 1 to 5, wherein the closing off is achievable by the use of a blanking plate.

7. A method according to any of claims 1 to 5, wherein the closing off is achievable by the use of a blanking pin inserted into the perforation.

8. A method according to claim 7, wherein the blanking pin is moveable within the perforation to adjust the volume of the closed-off perforation.

9. A method according to any of claims 1 to 5, wherein the closing off is achievable by placing a container in registration with the perforation.

10. A method according to any of claims 1 to 9, wherein the first director blade presents a forward acute angle to the path of relative motion.

11. A method according to claim 10, wherein said forward acute angle is between 1 and 60°.

12. A method according to claim 11, wherein the forward acute angle is between 5 and 25°.

13. A method according to any of claims 10 to 12, wherein the first director blade presents multiple forward acute angles to the path of relative motion.

14. A method according to claim 13, wherein the first director blade is curved in form.

15. A method according to claim 13, wherein the first director blade is articulated in form.

16. A method according to any of claims 10 to 15, wherein the first director blade has a flat tail section.

17. A method according to any of claims 1 to 16, wherein a thin layer of powder is left on the perforated plate after movement of the first director blade.

18. A method according to claim 17, wherein the depth of said thin layer of powder is from 3 to 20 mm.

19. A method according to claim 18, wherein the depth of said thin layer of powder is from 4 to 8 mm.

20. A method according to any of claims 1 to 19, wherein the powder is further directable by at least one subsequent director blade.

21. A method according to claim 20, wherein the at least one subsequent director blade moves along the perforated plate at a lower level than that of the first director blade.

22. A method according to claim 21, wherein the distance between the level of movement of the first director blade and the at least one subsequent director blade is 0 to 12 mm.

23. A method according to claim 22, wherein the distance between the level of movement of the first director blade and the at least one subsequent director blade is 1 to 3 mm.

24. A method according to either any of claims 1 to 23, additionally comprising removing excess powder from said perforated plate subsequent to directing powder into the perforation.

25. A method according to claim 24, comprising removing said excess powder by the action of a wiper.

26. A method according to any of claims 1 to 25, wherein said tablet is transferred to a container.

27. A method according to any of claims 1 to 26, wherein the contents of the perforation are transferable by the action of a transfer pin.

28. A method according to any of claims 1 to 26, wherein transfer of the contents of the perforation to the container comprises:

a) reopening the perforation;
b) placing the container in registration with the perforation; and
c) transferring the contents of the perforation into the container.

29. A method according to any of claims 1 to 26, wherein the contents of the perforation are transferable by the action of a vacuum system.

30. A method according to claim 29, wherein said vacuum system comprises a vacuum head and at least one vacuum cup.

31. A method according to any of claims 1 to 30, wherein the powder is compacted to a tablet of volume between 20 and 50% of the original volume of powder in the closed-off perforation.

32. A method according to claim 31, wherein the powder is compacted to a tablet of volume between 30 and 45% of the original volume of powder in the closed-off perforation.

33. A method according to either of claims 31 or 32, wherein the powder is compacted to form a dense tablet.

34. A method according to any of claims 31 to 33, wherein the powder is compactable by the action of a compacting pin.

35. A method according to either of claims 26 or 34, wherein the transfer pin and the compacting pin are integral.

36. A method according to either of claims 26 or 34, wherein the transfer pin and the compacting pin are identical.

37. A method according to any of claims 1 to 36, wherein the container is a blind cavity.

38. A method according to claim 37, wherein the blind cavity is selected from the group consisting of a blister pocket, an injection moulded plastic pocket, a capsule and a bulk container.

39. A method according to any of claims 1 to 38, additionally comprising applying a lid to the container to protect the contents therein.

40. A method of loading each of plural blisters arranged in series on an elongate blister strip with a tablet product which comprises:

a) closing off plural perforations in a perforated plate, said plural perforations being arranged in series;
b) directing powder into said plural closed-off perforations by the sweeping action of a first director blade spaced from said perforated plate;
c) compacting said powder in each of the plural closed-off perforations to form a tablet; and
d) transferring said tablet in each of the perforations to a corresponding blister of said elongate blister strip,

characterized by relative rotary motion of the perforated plate and said first director blade.

41. A method according to claim 41, wherein in step c) each perforation of the perforated plate is serially brought into registration with the corresponding blister of the blister strip.

42. A method according to claim 41, wherein at registration the perforated plate is rotating and the blister strip is moving on a linear path.

43. A method according to any of claims 1 to 42, wherein the tablet product comprises a medicament.

44. A method according to claim 43, wherein the medicament is selected from the group consisting of albuterol, salmeterol, fluticasone propionate and beclomethasone dipropionate and salts or solvates thereof and any mixtures thereof.

45. An apparatus for loading a container with a defined quantity of product, which comprises:

a) a perforated plate;
b) a closure for reversibly closing off a perforation in the perforated plate;
c) a director for directing powder into said closed-off perforation, said director comprising a first director blade spaced from the perforated plate;
d) a compactor for compacting said powder in the closed-off perforation to form a tablet; and
e) a transferor for transferring said tablet from the closed-off perforation,

wherein the perforated plate and said first director blade are movable in a relative rotary fashion.

46. An apparatus according to claim 45, wherein the first director blade is held static and the perforated plate is movable in rotary fashion relative thereto.

47. An apparatus according to claim 45, wherein the perforated plate is held static and the first director blade is movable in rotary fashion relative thereto.

48. An apparatus according to claim 45, wherein both of the first director blade and the perforated plate are movable in rotary fashion.

49. An apparatus according to any of claims 45 to 48, wherein the perforated plate is in the form of a planar disk having plural perforations arranged in circular fashion thereon.

50. An apparatus according to any of claims 45 to 49, wherein the closure comprises a blanking plate.

51. An apparatus according to any of claims 45 to 49, wherein the closure comprises a blanking pin inserted into the perforation.

52. An apparatus according to claim 51, wherein the blanking pin is moveable within the perforation to adjust the volume of the perforation.

53. An apparatus according to any of claims 45 to 48, wherein the closure comprises the container placed in registration with the perforation.

54. An apparatus according to any of claims 45 to 53, wherein the first director blade presents a forward acute angle to the path of relative motion.

55. An apparatus according to claim 54, wherein the forward acute angle is between 1 and 60°.

56. An apparatus according to claim 55, wherein the forward acute angle is between 5 and 25°.

57. An apparatus according to any of claims 54 to 56, wherein the first director blade presents multiple forward acute angles to the path of relative motion.

58. An apparatus according to claim 57, wherein the first director blade is curved in form.

59. An apparatus according to claim 58, wherein the first director blade is articulated in form.

60. An apparatus according to any of claims 45 to 59, wherein the first director blade has a flat tail section.

61. An apparatus according to any of claims 45 to 60, wherein the first director blade is positioned to leave a gap of between 3 and 20mm between the first director blade and the perforated plate.

62. An apparatus according to claim 61, wherein the first director blade is positioned to leave a gap of between 4 and 8 mm between the first director blade and the perforated plate.

63. An apparatus according to any of claims 45 to 62, wherein the director further comprises at least one subsequent director blade.

64. An apparatus according to claim 63, wherein the at least one subsequent director blade is positioned closer to the perforated plate than the first director blade.

65. An apparatus according to claim 64, wherein the at least one subsequent director blade is positioned 0 to 12 mm closer to the perforated plate than the first director blade.

66. An apparatus according to claim 65, wherein the at least one subsequent director blade is positioned 1 to 3 mm closer to the perforated plate than the first director blade.

67. An apparatus according to any of claims 45 to 66, wherein the transferor comprises a transferor pin.

68. An apparatus according to any of claims 45 to 66, wherein the transferor comprises a vacuum system.

69. An apparatus according to claim 68, wherein the vacuum system comprises a vacuum head and at least one vacuum cup.

70. An apparatus according to any of claims 45 to 69, wherein the compactor comprises a compactor pin.

71. An apparatus according to claim 70, wherein the transferor and compactor are integral.

72. An apparatus according to claim 70, wherein the transferor and compactor are identical.

73. An apparatus according to any of claims 45 to 72, additionally comprising registration means for registering the container with the perforation.

74. An apparatus according to any of claims 45 to 73, additionally comprising a powder remover for removing excess powder from the perforated plate subsequent to action of the powder director.

75. An apparatus according to claim 74, wherein the powder remover comprises a wiper.

76. An apparatus according to any of claims 45 to 75, wherein the container is a blind cavity.

77. An apparatus according to claim 76, wherein the blind cavity is selected from the group consisting of a blister pocket, an injection moulded plastic pocket, a capsule and a bulk container.

78. An apparatus according to any of claims 45 to 77, additionally comprising a lid applier for applying a lid to the container to protect the contents thereof.

79. An apparatus for loading each of plural blisters arranged in series on an elongate blister strip with a defined quantity of product, which comprises:

a) a perforated plate having plural perforations therein, said plural perforations being arranged in series;
b) a closure for reversibly closing off each of said plural perforations in the perforated plate;
c) a director for directing powder into each of said closed-off perforations, said director comprising a first director blade spaced from the perforated plate;
d) a compactor for compacting said powder in each of the closed-off perforations to form a tablet; and
e) a transferor for transferring the tablet contents of each of the perforations to a corresponding blister of said elongate blister strip,

wherein the perforated plate and said first director blade are movable in a relative rotary fashion.

80. An apparatus according to claim 79, additionally comprising registration means to serially bring each perforation of the perforated plate into registration with a corresponding blister of the blister strip.

81. An apparatus according to either of claims 79 or 80, wherein the perforated plate is in the form of a planar disk having plural perforations arranged in circular fashion thereon.

82. An apparatus according to claim 81, additionally comprising rotational means to rotate the perforated plate and moving means to move the blister strip in linear fashion.

83. An apparatus according to any of claims 45 to 82, further comprising powder.

84. An apparatus according to claim 83, wherein the powder comprises a medicament.

85. A tablet product obtainable by the method according to any of claims 1 to 39.